ORIGINAL ARTICLE

هناك تأثير للتعليم المداوم الطبي في مجال الإختلالات النفسيه على المستوى العلمي عند اطباء الصحه العامه في جامعه دزفول للعلوم الطبيه نظرا الى أنها قدتم تأسيسها حديثا

المقدمه: يتم التعليم الطبي المداوم CME لأطباء الصحه العامله GPS لاجل حفظ ورفع مستوى المهارات الحرفيه في مجالات عديده و خاصه الأختلافات النفسيه . نحن اجرينا هذه الدراسه لمعرفه مستوى تأثير CME على مستوى المعرفه في مجال الإختلالات النفسيه عند اطباء الصحه العامه في الجامعه التي تم تأسيسها حديثا في مدينه دزفول.

الاساليب: اشترك ٨٦ طبيب من اصل ٣٠٠ طبيب تابع لجامعه دزفول للعلوم الطبيه بشكل عشوايي في خريف عام ٢٠١٣ في برنامج التعليم المداوم الطبي . تم اختبار استماره منسجه من قبل ٦ اخصائيين في مجال النفس و تم ايضا ظبطها على اساس المعايير الإحصائيه.

تم تقييم المستوى العلمي عند الاطباء قبل و بعد الدوره بواسطه هذه الاستمارات. تم تحليل المعطيات بواسطه تحاليل تداخليه مثل ضريب الترابط بيرسون و اسبرمن و ايضا تم استعمال ANCOVA و T.TEST. تم علاج المعطيات بواسطه برنامج SPSS18.

النتائج : اشارت النتائج الى اختلاف زوقيمه $P<0.01$ في معدلات الاطباء قبل و بعد التعليم في مجال علم النفس . اضافه الى ذلك اشارت الى المستوى العلمي الجيد عند الاطباء و معذلك إن هذه الدوره رفعت المستوى العلمي عندهم ايضا بشكل ملحوظ ($P< 0.01$).

البحث: إن التعليم المداوم في مجال الاختلالات النفسيه يرفع المستوى العلمي بشكل ملحوظ عند اطباء الصحه العامه و خاصه في المناطق النائيه و المراكز التعليميه قليله المصادر العلميه. لذا نوصي بإجراء هذه الدورات خاصه في المناطق التي تشبه مكان هذه الدراسه من جهه الامكانات و البيئه .

الكلمات الرئيسيه: التعليم الطبي المداوم CME، اطباء الصحه العامه GPS، الطب النفسي ، المعرفه عند اطباء الصحه العامه.

Continuing Medical Education in the Field of Psychiatric Disorders Affects General Practitioner`s Knowledge, in Dezful University of Medical Sciences, as a Newly Established University

Mohamad Ali Tosang [1, 2,*], Naser Sarraj Khorramy [2], Masoud Boroumand Nasab[2], Maysam Mard-Soltani[1]

[1] Dezful University of Medical Sciences, Dezful, IRAN

[2] Islamic Azad University of Dezful, Kuy-e-Azadegan, Dezful, IRAN

[*] Dezful University of Medical Sciences, Azadegan Blv., Dezful, IRAN

Tel: +98-641-6269532
E-mail: toosang.m20@gmail.com

Received: February 8, 2015
Accepted: June 15, 2015

Background: Continuing Medical Education (CME) of general practitioners (GPs) regarding most of the diseases, especially psychiatric disorders, is implementing worldwide to maintain and develop their knowledge, skills, and professional performance. We investigated the effects of CME on GPs knowledge in the field of psychiatric disorders in Dezful University of medical sciences (DUMS) as a Newly Established University.

Methods: Among the 300 volunteers of GPs affiliated to DUMS in autumn 2013, 86 of them were randomly selected to attend in continuing psychiatric education schedule. A self-administered questionnaire was prepared by consultation of six psychiatrists and its validity and reliability was assessed. GPs knowledge before and after CME training session were evaluated by this questionnaire. Data analysis was performed using, inferential tests such as Pearson and Spearman correlation coefficient test and also, ANCOVA and paired t-test were used. Data were analyzed with using statistical software SPSS 18.

Results: The results showed that there is a significant difference ($P < 0.01$) at the mean scores of GPs knowledge before and after training in the fields of psychiatry. Moreover, it was indicated that although subject`s knowledge is acceptable about psychiatry, but precise continuing education courses could improve their knowledge significantly ($P< 0.01$).

Conclusions: CME significantly improves GPs knowledge in psychiatric disorders area especially in less developed regions and medical center with limited scientific resources. Therefore, implementing this type of trainings in regions which are potentially similar to our study area could be very useful.

Keywords: Continuing Medical Education (CME); General Practitioners (GPs); Psychiatry; GP's Knowledge

نفسیاتی امراض کے سلسلے میں عام ڈاکٹروں کے لئے مسلسل طبی تعلیم کے اثرات۔ دزفول طبی یونیورسٹی ایک نئي یونیورسٹی ہے

بیک گراونڈ: عام ڈاکٹروں جی پیز کے لئے طبی تعلیم کا سلسلہ جاری رکھنے سے بالخصوص نفسیاتی بیماریوں کے سلسلے میں تعلیمی سلسلہ جاری رکھنے سے ان کے علم میں اور پیشہ ورانہ صلاحیتوں میں اضافہ ہوتا ہے۔ تازہ قائم کی گئي دزفول میڈیکل یونیورسٹی میں نفسیاتی بیماریوں کے بارے میں جی پیز پر سی ایم ای کے اثرات کا جائزہ لیا گیا۔

روش: اس تحقیق میں دوفول میڈیکل یونیورسٹی سے وابستہ تین سو عام ڈاکٹروں (جی پیز) نے حصہ لیا، یہ تحقیق دوہزار تیرہ میں انجام پائي، اس میں چھیاسی ڈاکٹروں نے رینڈم طریقے سے بھی حصہ لیا۔ شرکت کرنے والے ڈاکٹروں کے لئے ایک سوالنامہ بنایا گیاتھا۔ یہ سوالنامہ چھے ماہرین نفسیات کی مدد سے بنایا گیا تھا اس کے بعد سی ایم ای کلاس کے بعد اور اس سے پہلے کی علمی سطح کا جائزہ لیا گیا۔ ڈیٹا کا تجزیہ پیرسن اینڈ اسپرمین ریشیو ٹسٹ سے کیا گیا۔ اسکےعلاوہ anova اور ٹی ٹسٹ سے بھی جوابات کا جائزہ لیا گیا جبکہ ایس پی ایس ایس سافٹ ویرسے بھی کام لیا گیا۔

نتیجے: اس تحقیق سے پتہ چلتا ہےکہ سی ایم ای کے بعد جی پیز کی معلومات میں کافی اضافہ ہوا اور ہرچند جی پیز کی معلومات قابل قبول ہیں لیکن اگر انہیں نفسیاتی بیماریوں کے بارے میں ٹریننگ دی جائے تو اس سے انہیں بے حد فائدہ ہوسکتا ہے۔

سفارشات: جی پیز کو نفسیاتی بیماریوں کے بارے میں مسلسل ٹریننگ دیتے رہا بالخصوص ان علاقوں میں جو محروم اور پسماندہ ہیں نہایت مفید ہے۔ لھذا اس طرح کے تعلیمی پروگراموں سے سب کو فائدہ پہنچتا ہے۔

کلیدی الفاظ: نفسیاتی بیماریاں، جی پیز، سی ایم ای۔

آموزش مداوم پزشکی در زمینه اختلالات روانی بر دانش پزشکان عمومی در دانشگاه علوم پزشکی دزفول، بعنوان یک دانشگاه تازه تاسیس، تاثیر دارد

پیش زمینه: آموزش مداوم پزشکی (CME) پزشکان عمومی (GPs)، جهت بسیاری از بیماری ها بویژه اختلالات روانی، جهت حفظ و ارتقاء دانش، مهارت و عملکرد حرفه ای این افراد به نحو گسترده ای اجرا می گردد. ما اثرات CME را بر سطح آگهی پزشکان عمومی در زمینه اختلالات روانی، در دانشگاه علوم پزشکی دزفول بعنوان یک دانشگاه تازه تاسیس بررسی نمودیم.

روش ها: از میان۳۰۰ پزشک داوطلب وابسته به دانشگاه علوم پزشکی دزفول در پاییز ۲۰۱۳، ۸۶ نفر به صورت تصادفی در برنامه آموزش مداوم پزشکی روان پزشکی حاضر گردیدند. پرسشنامه ای محقق ساخته با مشاوره ۶ متخصص روان پزشکی تهیه و روایی و پایایی آن بررسی گردید. سپس سطح دانش افراد قبل و بعد از این جلسه آموزش مداوم پزشکی بوسیله این پرسشنامه ارزیابی گردید. آنالیز داده ها بوسیله تست های مداخله ای از قبیل ضریب همبستگی پیرسون و اسپرمن و همچنین با استفاده ازANCOVA و T-Test انجام گردید. داده ها با استفاده از نرم افرار SPSS ویرایش ۱۸ آنالیز گردید.

نتایج: نتایج ما نشان داد که اختلاف معناداری یا $P < 0.01$ در امتیاز میانگین دانش پزشکان عمومی قبل و بعد از آموزش در زمینه روان پزشکی وجود داشت. علاوه بر این مشخص گردید اگر چه دانش افراد حاضر در رابطه با روان پزشکی قابل قبول است، اما دوره های دقیق آموزش مداوم پزشکی می تواند دانش این افراد را به طور معنادار بهبود بخشد ($P < 0.01$).

بحث: آموزش مداوم پزشکی در زمینه اختلالات روانی به نحو معناداری دانش پزشکان عمومی را بویژه در مناطق کمتر توسعه یافته و مرکز آموزشی با منابع علمی محدود بهبود می بخشد. بنابراین اجرای اینگونه برنامه های آموزشی، در مناطقی که به طور بالقوه مشابه حوزه مطالعه ما هستند، می تواند بسیار کارآمد باشد.

واژگان کلیدی: آموزش مداوم پزشکی CME، پزشکان عمومی (GPs)، روان پزشکی، دانش پزشکان عمومی

INTRODUCTION

Continuing Medical Education (CME) as set of activities to maintain and improve the knowledge, skills and professional performance of physicians seem to be essential (1).Education is an important part of medical systems which it`s executive processes has been investigated in some countries (2, 3). According to the changing of health care needs, many experts in healthcare fields believe that education of GPs like other health professionals is necessary to be continued by education system after their graduation.

Based on mentioned information, the CME system is established, programmed and implemented in many countries (4). CME has been enacted in Iran according to the other countries since 1990 to improve and update graduated people`s knowledge, skills and attitudes (5). As investigations indicate, an important reason to apply these kinds of plans and training programs is the lack of self-assurance among physicians who are working in outlying centers (4). On the other side, out of dated medicinal graduated personnel could be harmful to health system and human society (6). Due to the growing CME around the world, including Iran, an issue that is now considered is CME quality and effectiveness on increasing knowledge and improving attitudes and practices of GPs attending. Also, the main question is whether the application of time and energy, professors, participants, and administrative systems is efficient or not? Some experiences have raised doubts in this issue especially about suitability of educational planning, which has important role in manpower training in the medical community.

In addition, educational planning, as outline of training activity, determines course content and defines teaching method, expectations or demands of pupils, facilitating learning process methods, ways of students' assessment, program evaluation, and finally the schedule of course. Therefore, educational planning of the training process is so important (7).

Although, it is crystal clear which educational programs and trainings in health sciences should not be confined to students. In the other words, physician re-training schemes should also be considered. Therefore, new methods of educational programs should be applied to both of students and physicians. So, personnel training and comprehensive educational program according with the requirements of the health system is the main part of any medical education plan and it is important that education plan be in parallel with the updated society needs.

In this regard, personnel training and comprehensive educational program, which could respond to the needs of changing health society, is an important and crucial part of educational system (8).

Although, CME is applied in health system all the time, but there is not enough evidences about its benefits. Therefore, this investigation applied to study the effects of CME on GP`s knowledge in the field of psychiatry in Dezful University of medical sciences (DUMS) as a underserved medical center with limited scientific resources.

METHODS

This study was Quasi-experimental research which investigated general practitioners knowledge in psychiatry field beside effects of CME on them. Statistical Society of the study was 300GPs, affiliated to DUM Sin autumn 2013, which Iran CME Act includes them. Simple random sampling of 300 physicians according to Morgan table, was carried out and sample size was n = 86.

In this study, inclusion criteria were: being GPs registered in CME interventions in the field of psychiatry, GPs were not required to use the internet in training session, the educational intervention don't be in the form of an online base training. On the other hands, GPs if they were unwilling or unable to full time participate full time in training session were excluded. GPs outside of Dezful, Khuzestan provinces, Iran were excluded.

The self-administered questionnaire consists of two parts: the first part included demographic information and three questions that were related information such as age, marital status, and work experience. The second part was related to general practitioner`s knowledge about concepts and modern medical treatments in psychiatry, which included 35 multiple choice questions for before training and 35 multiple choice questions for after training.

To determine the questionnaire justifiability, content and face validity index was used and the questions was revised by six expert professors of DUMS. Then, at a distance of 10 days and on 15 GPs Test re-test method was applied to determine questionnaire external validity. The Pearson correlation coefficient between scores of the questionnaire in the first and second times was obtained 0.8.Also, Cronbach's α method was applied to specify questionnaire internal validity and that was 0.83. V

After obtaining the necessary permits from CME leaders in DUMS, 86 self-administered questionnaires were filled out by GPs one to two hours before training to gather data from subjects. Then the training session held for one hour and 30 minutes after training session there test questionnaires were filled out by GPs.

Then, for data analysis, inferential tests such as Pearson and Spearman correlation coefficient test, ANCOVA and T-test were used. Data were analyzed by SPSS18.0 software.

RESULTS

The number and percentages of demographic characteristics of GPs in DUMS attendees in this study are presented in Table 1.

As shown in tables 2 and 3, before and after education, there is a statistically significant difference among the mean scores

Table 1. Demographic Characteristics of the GPs in DUMS

Characteristics	
Number of GPs	86
Age (Mean ± SD)	38.45 ± 7.31
Work Experience (Mean ± SD)	9.93 ± 6.01
Gender	
Male (%)	56 (65.1)
Female(%)	30 (34.9)

Table 2.The central tendencies and dispersion indices represent the scores of GP's knowledge in the field of psychiatry in DUMS

	Before training Number of GPs=86			After training Number of GPs=86			
Psychiatry	Mean score	Standard Erorr Mean	Standard deviation	Mean score	Standard Erorr Mean	Standard deviation	**P Value***
	9.34	0.22	2.09	11.98	0.27	2.54	P<0.001

* Differences between mean scores of GPs before and After Psychiatry training session

Table 3. Results of the univariate analysis of covariance (ANCOVA) for evaluating the knowledge of GP's of DUMS in the field of psychiatry.

	Sum of squares	Degree of freedom	Mean squares	F test	Eta^2	Power of test	P value
Pretest	352.094	1	352.094	137.159	0.62	1.000	0.001**
level of knowledge	61.682	1	61.682	24.029	0.222	0.998	0.001**
Error	215.632	84	2.569				
Total	9675.0000	86					

**significant with the p value of 0.001

Table 4. The relationship between individual characteristics (age and work experience) with the level of knowledge in GPs affiliated to DUMS in the field of psychiatry.

Independent Variable / Dependent Variable	The level of knowledge in general practitioners in the field of psychiatry.				
	Type of test	Number	Coefficient	Error level (α)	P value (P)
Age	Pearson Correlation	86	-0.124	0.05	0.26
Work experience	Pearson Correlation	86	-0.007	0.05	0.95

of GP's knowledge related to the field of psychiatry in the DUMS (9.34 vs. 11.98). The difference suggests the impact of CME on the GP's knowledge according to the field of psychiatry.

According to Table 3, in the field of psychiatry, CME programs had more impact on knowledge of female GP's. Moreover, the impact of CME in the field of internal medicine on the knowledge of GPs was inversely related to their age. There was no significant relationship between work experience and level of knowledge in the field of internal medicine.

According to the Spearman correlation coefficient which is shown in table 4, in the field of psychiatry, there is not significant reverse association between sex and the level of knowledge in GPs working in DUMS ($p > 0.05$). Furthermore, there is not any significant relationship among age, work experience and the level of knowledge.

DISCUSSION

In the field of psychiatry, we investigated the efficacy of CME among GPs affiliated to DUMS. About 22 percent of differences in the effect of psychological education on GP's knowledge were attributed to sex difference (data not shown).It has concluded that there is a significant alteration in the knowledge of GPs before and after education in the field of psychiatry.

Based on the data obtained from DUMS, we clearly showed that there is a noticeable positive change in the knowledge of GPs after performing the CME programs in the field of psychiatry. This study is in concomitance with the previous studies carried out by Rutz et al (9, 10).

The effectiveness of CME programs can be evaluated at various levels including knowledge, attitudes, and skills of participants besides patient's care. The most common method which can be used to assess the efficacy of education is investigating the impact of training on participant's knowledge. According to aforementioned reasons, it is necessary and rational to study the effectiveness of CME programs. On the other hand, CME programs are considered as necessary educational activities that maintain, develop, and increase the knowledge and professional performance of physicians. Continuing education is the most important way to inform physicians of new healthcare programs.

Both the fast development of medical sciences and protection of patients, who have the right to be cured by expert and knowledgeable physicians, are prominent examples of why CME has been targeted to be improved (11-15).Regarding the results of this study and based on the ideas of physicians who engage in CME programs, the necessity of revision in these programs is evident and inevitable.

It has been emphasized that individual differences such as sex, should be considered during evaluation of CME in the field of psychiatry (16). Considering the field of psychiatry, we studied

the effect of individual characteristics such as sex, age and work experience on the knowledge of GPs affiliated to DUMS. As the data show, CME programs in the field of psychiatry have more effect on female GPs in comparison to male physicians (table 4). This study indicates that there is not any significant linear correlation among age, sex and work experience.

Obviously social, emotional and intellectual development of human is not confined only to childhood, but including entire life cycle ranging from birth to end. On the other word, the education is not exclusive for primary schools, high schools, colleges and official course contents, but education should be continuous. As it is obvious, continuing education has put the educational programs in a new and important way. To be a constructive and dynamic process, the principle of continuing education requires formal and informal trainings which should be linked and coordinated with each other and also be compatible with the individual features (age, sex, work experience), economic and social needs of human during the entire life. Thus, it is necessary to revising the CME programs and producing comprehensive medical education programs as in Iran the Ministry of Health and Medical Education is responsible for.

We showed that when the individual characteristics of GPs (age and work experience) increase, the knowledge of GPs concomitantly decrease which may be due to less eagerness and more Preoccupation in more experienced GPs. In a study carried out by Brøndt et al, it was found that in the Danish GPs, who were not members of a CME group and did not take part in outreach visits, a higher likelihood of suffering from burnout and high burnout was seen in comparison to those who were members of a CME group or received outreach visits (17, 18). We interestingly found that increasing in the mean scores of young and older physicians after continuing education is similar to each other and there is no significant difference between them. In spite of our expectations, it appears that CME programs have not different effects on the knowledge of young GPs in comparison to older (data not shown).

Our study limitations were that all presenters were given the core content and learning objectives during training session, it is possible that differences in presentation style and old knowledge of GPs led to different responses in terms of both knowledge and CME activity preference. Also, during the training session, it is possible that some GPs entered or left the training room and don't give the all content of training session. An additional limitation in this study was the lack of demographic data collected on participates such as subject's grade point average to graduation.

In conclusion, CME programs area inevitable necessity for all fields and jobs, especially in the field of medicine. It is important to plan and perform different programs in this active area.

ACKNOWLEDGMENTS

Financial support and Research committee approval: This article is the result of a research project approved by the Dezful University of Medical Sciences, Department of Research and Information Technology with the code of DUR-108.The authors would also like to show their gratitude to the vice chancellor for the spiritual support of Islamic Azad University of Dezful.

Conflict of Interest: The authors declare that they have no conflict of interests.

REFERENCES

1. Lewis C. Continuing medical education: Past, present, future. West J Med 1998;168(5): 334-40.
2. Davis DA, Thomson MA, OxmanAD, Haynes B. Changing physician performance: A systematic review of the effect of continuing medical education strategies. JAMA1995; 274: 700-5.
3. Loevinsohn BP. Health education interventions in developing countries: A methodological review of published articles. Int J Epidemiol1990; 19: 788-94.
4. HERDS. A guide on course revision. HEDSA: Australia; 2007.
5. Vakil H. Problems and challenges of programming in medical in country. Journal ofcontinuousmedicaleducation 1992; 2: 5-9.[In Persian].
6. Gibberson, R. A. D. M., C. D. R. Yoder, and C. D. R. Lee. "Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the US Surgeon General." University of the Incarnate Word Pharmacy Review 1.2 (2012).
7. Wentling TL. Planning for effective training: A guide to curriculum development. Chizari M. (translator).Tehran: TarbiatModarres University; 1996. [In Persian].
8. YazdaniSh, Hatami S. General practitioner in Iran Tasks and educational needs: Methods and result application. Tehran: ShaheedBeheshti University of Medical Sciences; 2004. [In Persian].
9. Rutz W, Walinder J, von Knorring L, Rihmer Z, Pihlgren H. An educational program on depressive disorders for general practitioners on Gotland: background and evaluation. ActaPsychiatrScand1989; 79(1): 19-26.
10. Rutz W, von Knorring L, Walinder J. Long-term effects of an educational program for general practitioners given by the Swedish Committee for the Prevention and Treatment of Depression. ActaPsychiatrScand1992; 85(1): 83-8.
11. Mamede S, Loyens S, Ezequiel O, Tibirica S, Penaforte J, Schmidt H. Effects of reviewing routine practices on learning outcomes in continuing education.Med Educ2013; 47(7): 701-10.
12. Mazmanian PE, Davis DA. Continuing medical education and the physician as a learner. JAMA2002; 288(9): 1057-60.
13. Coco-Martin RM, Sanabria MR, Fernandez I, Sala A, Valverde C, Perez R. General practitioners´ knowledge gaps regarding age related macular degeneration and effectiveness of their e-learning training. J HospAdministr2013; 2(4): 37.
14. Seyedmajidi M, Haghanifar S, Motallebnejad M, Zahedpasha Y, Bijani A. General dentists' perspective in teaching methods of continuing educational programs in Mazandaran Province (2010-2011). Future of medical education journal 2013; 3(4):29-34.
15. Zarghi N, AkbariLakeh M, Lookian F, Baradaran A, Baghestani Z, Jomezadeh MR, et al. Audiences' feedback of problem based learning workshops as a new experience in Mashhad University of Medical Sciences. Future of medical education journal 2011; 1(1):21-5.
16. Wright JM. Continuing medical education in psychiatry. Aust NZ JPsychiatry1991; 25(1): 111-18.
17. Zavar A, KhadiviZand S, Kabiri F. Assessment of educational needs for retraining physicians working at addiction treatment and rehabilitation centers. Future of medical education journal 2013; 3(3):46-7.
18. Brondt A, Sokolowski I, Olesen F, Vedsted P. Continuing medical education and burnout among Danish GPs. Br J Gen Pract2008; 58(546): 15.